

### Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (original) A method for treating obesity in a mammalian patient, comprising determining whether or not the patient carries at least one melanocortin 4 (MC4) receptor mutation that is associated with obesity and, if the patient carries such a mutation, administering an amount of a non-toxic melanin concentrating hormone (MCH) receptor antagonist effective to reduce either or both of (1) food consumption or (2) body mass index of the patient upon sustained administration.
2. (original) A method according to claim 1, wherein the MCH receptor antagonist has a molecular mass less than 700 a.m.u. and is nonpeptidic.
3. (original) A method according to claim 1, wherein the MCH receptor antagonist has no detectable MCH receptor agonist activity.
4. (original) A method according to claim 1, wherein the MCH receptor antagonist binds to an MCH receptor with a  $K_i$  that is less than 1 micromolar.
5. (original) A method according to claim 1, wherein the MCH receptor antagonist binds to an MCH receptor with a  $K_i$  that is less than 100 nanomolar.
6. (original) A method according to claim 1, wherein the MCH receptor antagonist is administered orally.
7. (original) A method according to claim 1, wherein the MCH receptor antagonist is administered by injection.

8. (original) A method according to claim 1, wherein the determination of whether or not the patient carries an MC4 receptor mutation is performed via PCR using a sample of a tissue or body fluid obtained from the patient.

9. (original) A method for treating obesity in a patient carrying at least one MC4 receptor mutation that is associated with obesity, comprising administering an effective amount of a non-toxic MCH receptor antagonist to a patient previously determined to carry such a mutation.

10. (original) A method according to claim 9, wherein the MCH receptor antagonist has a molecular mass less than 700 a.m.u. and is nonpeptidic.

11. (original) A method according to claim 9, wherein the MCH receptor antagonist has no detectable MCH receptor agonist activity.

12. (original) A method according to claim 9, wherein the MCH receptor antagonist binds to an MCH receptor with a  $K_i$  that is less than 1 micromolar.

13. (original) A method according to claim 9, wherein the MCH receptor antagonist binds to an MCH receptor with a  $K_i$  that is less than 100 nanomolar.

14. (original) A method according to claim 9, wherein the MCH receptor antagonist is administered orally.

15. (original) A method according to claim 9, wherein the MCH receptor antagonist is administered by injection.

16. (original) A method for preventing obesity in a mammalian patient, comprising determining whether or not the patient carries at least one MC4 receptor mutation that is associated with obesity and, if the patient carries such a mutation, administering an effective

amount of a non-toxic melanin concentrating hormone (MCH) receptor antagonist, and thereby preventing obesity in the patient.

17. (original) A method according to claim 16, wherein the MCH receptor antagonist has a molecular mass less than 700 a.m.u. and is nonpeptidic.

18. (original) A method according to claim 16, wherein the MCH receptor antagonist has no detectable MCH receptor agonist activity.

19. (original) A method according to claim 16, wherein the MCH receptor antagonist binds to an MCH receptor with a  $K_i$  that is less than 1 micromolar.

20. (original) A method according to claim 16, wherein the MCH receptor antagonist binds to an MCH receptor with a  $K_i$  that is less than 100 nanomolar.

21. (original) A method according to claim 16, wherein the MCH receptor antagonist is administered orally.

22. (original) A method according to claim 16, wherein the MCH receptor antagonist is administered by injection.

23. (original) A method according to claim 16, wherein the determination of whether or not the patient carries an MC4 receptor mutation is performed via PCR using a sample of a tissue or body fluid obtained from the patient.

24. Canceled.